AMENDMENTS TO THE CLAIMS

1. – 3. (cancelled)

4. (Currently Amended) An apparatus comprising:

a programmable logic controller lacking instructions to convert a user program from a symbolic form to a binary form, said programmable logic controller comprising:

a single chip program execution device comprising:

a micro controller operable to implement programmable logic controller I/O functions upon executing a compilation comprising the user program and a system support ~~kernal~~kernel, the system support kernel adapted to provide said programmable logic controller with operating system functions comprising sequencing the user program; and

a re-programmable read only memory within which the compilation is stored,

said single chip program execution device separable from a communication/programming device adapted to ~~compile~~ convert the user program to a binary code module and combine the binary code module with the system support kernel~~kernal~~ into a single executable firmware module, said programmable logic controller lacking a memory device external to said single chip program execution device.

5. (Currently Amended) A method comprising:

receiving a symbolic user program at a communication/programming device, said communication/programming device separable from a single chip program execution device having a re-programmable read only memory, said single chip program execution device adapted to execute a binary programmable logic ~~controller~~ control program, said binary programmable logic control ~~controller~~ program stored within said re-programmable memory, said binary programmable logic control program adapted to operate a programmable logic controller, said programmable logic controller lacking a memory device external to said single chip program execution device; and

compiling, at said communication/programming device, said symbolic user program to a binary code module; and

combining the binary code module with a system support kernel~~kernal~~ to form said binary programmable logic control program, the system support kernel adapted to provide said programmable logic controller with operating system functions comprising sequencing the user program.

6. (Previously Presented) The method of claim 5, comprising:

providing said binary programmable logic control program to said single chip program execution device.

7. (Currently Amended) A method comprising:

receiving, from a communication/programming device, a binary programmable logic control program at a single chip program execution device having a re-programmable read only memory, said communication/programming device separable from said single chip program execution device, said binary programmable logic control program comprising a compilation of a symbolic user program ~~and~~ combined with a system support kernel~~kernal~~ to form a single executable module, the system support kernel adapted to provide said programmable logic controller with operating system functions comprising sequencing the user program said single chip program execution device adapted to execute said binary programmable logic control ~~controller~~ program to operate a programmable logic controller, said programmable logic controller lacking a memory device external to said single chip program execution device; and

loading said binary programmable logic control program into said re-programmable read only memory of said program single chip execution device.

8. (Previously Presented) The method of claim 7, further comprising:

executing said binary programmable logic control program on a micro controller of said single chip program execution device.

9. (Currently Amended) A programmable logic controller system, comprising:

within a single chip, a program execution device having a re-programmable memory, said program execution device adapted to execute a binary programmable logic control ~~controller~~ program, said binary programmable logic control ~~controller~~ program

stored within said re-programmable memory, said binary programmable logic control ~~controller~~ program comprising a compilation of a user program and a system support kernel~~kernal~~, said binary programmable logic control program adapted to operate a programmable logic controller, said programmable logic controller lacking a memory device external to said single chip program execution device; and

a communication/programming device separable from said program execution device, said communication/programming device providing functions required for external communication ~~and compilation~~ of said binary programmable logic control ~~controller~~ program, said binary programmable logic control program comprising a binary module formed from compiling a symbolic user program, the binary module combined with a system support kernel to form a single executable module, the system support kernel adapted to provide said programmable logic controller with operating system functions comprising sequencing the user program, said communication/programming device adapted to load ~~and loading of~~ said binary programmable logic control ~~controller~~ program into said re-programmable memory and wherein said binary programmable logic control ~~controller~~ program is stored in said re-programmable memory of said program execution device by direct manipulation of logic controls of said re-programmable memory.

10. (Previously Presented) The programmable logic controller system according to claim 9, further comprising:

a watchdog timer.

11. (Currently Amended) A machine-readable medium storing instructions for activities

comprising:

receiving a symbolic user program at a communication/programming device, said communication/programming device separable from a single chip program execution device having a re-programmable read only memory, said single chip program execution device adapted to execute a binary programmable logic control ~~controller~~ program, said binary programmable logic control ~~controller~~ program stored within said re-programmable memory, said binary programmable logic control program adapted to operate a programmable logic controller, said binary programmable logic control program comprising a binary module derived via compiling a symbolic user program, the binary module combined with a system support kernel to form a single executable module, the system support kernel adapted to provide said programmable logic controller with operating system functions comprising sequencing the user program, said programmable logic controller lacking a memory device external to said single chip program execution device; and

compiling, at said communication/programming device, said symbolic user program with a system support kernel~~kernal~~ to form said binary programmable logic control program.